

Among the birds observed at Quinta the "Chuña" (*Chunga burmeisteri*) should also be mentioned, and a small Owl, obtained at the same locality, which I refer to *Glaucidium phalaenoides* (Daud.).

The following Trochilidæ were collected at Quinta by Dr. Rob. Fries:—

Heliomaster furcifer (<i>G. Shaw</i>).		Lesbia sparganura (<i>G. Shaw</i>).
Chlorostilbon aureiventris (<i>d'Orb.</i> <i>et Lafri.</i>).		Chætocercus burmeisteri
		(<i>Sclater</i>)*.

III. BIRDS OF MORENO ON THE PUNA DE JUJUY, ARGENTINE REPUBLIC.

Moreno, the second station where birds were collected, was much more interesting, both from its situation at such a great altitude above the sea-level and from the natural conditions prevailing therè. Mr. von Hofsten tried, therefore, to collect as many specimens as he was able and made some notes about species that were noticed but could not be obtained. The following list may be regarded as fairly complete, as it is based on observations continued through two months and a half.

1. ZENAIIDA AURICULATA (Des Murs).

Only one specimen was observed and shot at Moreno on December 6th, 1901. It agrees perfectly with the description in the Cat. of Birds, vol. xxi., except that the ear-spot is obsolete. Iris reddish brown.

narrowly tipped with white. The colour of the head may be termed ashy-brown. It is thus in its coloration apparently intermediate between *V. chilensis* and *V. cayemensis*, although from its size it must be assigned to the former species.

* A female of this very rare species was obtained at Quinta. A short time ago the type at Buenos Aires was the only known specimen of this bird. The type was a male, and the female was unknown when Mr. E. Hartert wrote the "Trochilidæ" in 'Das Tierreich' in 1900. This female is not, however, the first obtained, as Mr. Hartert has recently examined five specimens and has described one of them in the Bull. Brit. Orn. Club, vol. xii. p. 43. The type-specimen was from Tucuman, a more southern locality than the Province of Jujuy.

2. *METRIOPELIA AYMARA* (d'Orb.).

Three specimens in spirit. This Pigeon seems to have been common.

3. *METRIOPELIA MELANOPTERA* (Molina).

A specimen preserved in spirit agrees perfectly with the description in the Cat. of Birds, but its measurements are rather smaller. Wing 130, tail 85 mm.

4. *PTILOSCELIS RESPLENDENS* (Tschudi).

In habits and manner of occurrence this bird resembles the European Lapwing. It feeds on larvæ and insects, but more especially on a small crustacean (*Hylea laevis*). Usually from eight to ten individuals are found together on the moist meadows. When disturbed they fly screaming round and warn other birds, being thus troublesome to the hunter. Specimens were collected in October and November 1901.

4-5. *CHARADRIUS DOMINICUS* Müll.

Only one specimen was observed and shot, December 1st, 1901, on a rivulet near Moreno.

6. *ÆGIALITIS SEMIPALMATA* (Bp.).

This bird occurred in small flocks of from ten to fifteen individuals on the moist meadows, feeding on insects.

7. *HETEROPYGIA MACULATA* (Vieillot).

This Wader occurred in couples on the moist meadows, feeding on insects and crabs. Specimens were shot at Moreno in December 1901.

8. *THINOCORUS ORBIGNIANUS* Geoffr. & Less.

These birds live in flocks of from six to ten on the sandy plains and fields of drifting sand. They resemble Sand-Grouse, and have a remarkable similarity to the ground which they frequent. They squat very close.

A specimen from Moreno, shot in December 1901, is somewhat abnormal. Its measurements are unusually small (wing 125, tail 62, tarsus 16 mm.), but, on the other hand, they are larger than those of *T. rumicivorus*, while the tail is even longer than in typical *T. orbignianus*. The skin

is in such a bad state that it is difficult to ascertain the colour of some parts of the plumage, but the back is not stained and its colour is more sandy than in typical *T. orbignianus*, with hardly any rufous tinge. The forehead and nape are not grey but sand-coloured with black central spots, thus resembling the back in colour. The sides of the face are light sandy. The colour of the fore-neck cannot be made out, and in other respects the plumage is similar to that of the known species. It is thus difficult to form an opinion about the specimen. It might be a young bird, although it does not appear to be so.

†9. PLEGADIS GUARAUNA (Linn.).

In large flocks on the moist meadows.

10. NYCTICORAX TAYAZUGUIRA (Vieillot).

A young bird, the only specimen obtained, was shot in November 1901 at San Antonio, Puna de Jujuy.

11. NETTION FLAVIROSTRE (Vieillot).

This little Duck was rather common in the rivulets on the puna.

12. SPATULA PLATALEA (Vieillot).

A young female was shot in a rivulet at Moreno on December 10th, 1901, but the species was rather scarce. Other specimens were shot at Abra Pampa, not far from Moreno.

13. IBYCTER MEGALOPTERUS (Meyer).

Very common at Moreno. It feeds on carrion, though also on living prey, and in addition to this on insects (beetles) and seeds.

14. BUTEO ERYTHRONOTUS (King).

A beautiful female specimen of this Buzzard was obtained at Moreno.

†15. FALCO FUSCO-CERULESCENS Vieillot.

Two specimens, shot at Moreno in November 1901. This Falcon preys on small birds and mice.

16. *SPEOTYTO CUNICULARIA* (Molina).

This little Owl was to be seen by day as well as by night, but generally after it had become dark. It lives in pairs among the Tola-bushes (*Leptophyllum*), and nests in burrows belonging to rodents. The prey consists of small birds and mammals, as well as of beetles. The length of the wing in the specimens brought home varied from 191 to 200 mm. It was common at Moreno.

17. *BOLBORHYNCHUS ORBIGNYI* Finsch.

Iris brown. Fully-developed specimens agree perfectly with the description of this species in the Cat. of Birds (vol. xx. p. 236), except that the great under tail-coverts have a slight bluish tinge, in which respect they resemble the corresponding feathers of *B. rubrirostris*. In some specimens the tail is rather short, but that seems to depend upon the fact that it is much worn. I think, therefore, that the Parrakeet of Moreno must be referred to this species, even if in some degree it approaches *B. rubrirostris*.

This little Parrakeet occurs at Moreno in large flocks of several hundreds, which fly about screaming loudly. But they are only found where the Tola-bushes (*Leptophyllum*) grow, and seem to feed exclusively on the buds and seeds of those shrubs. They nest in burrows which are dug out in the barrancas. Mr. von Hofsten examined two breeding-holes, and found that they consisted of a burrow about two metres long which ran almost straight into the barranca but sloped upwards. At the end of this duct was a chamber containing the nest made of feathers, and the white eggs. Beyond the chamber another duct continued of from 20 to 30 cm. in length which led to a larger chamber, apparently used for defæcating.

18. *PATAGONA GIGAS* (Vieillot).

This Humming-bird certainly seems to visit the white flowers of the great columnar cactus for the honey as well as for the insects in the flowers. It was also obtained at Ojo del Agua, Puna de Jujuy, but was not common.

19. *CHLOROSTILBON AUREIVENTRIS* (d'Orb. et Lafr.).

Mr. von Hofsten twice found nests of this little Humming-bird. They are very simply made of grass-straws and wool of the vicuña. In the first was found one, in the other two white eggs measuring 16 by 10 mm. The nests were placed in crevices in the rocks, at steep and inaccessible places.

20. *COLAPTES RUPICOLA* d'Orb.

This Woodpecker occurred at an altitude of 5000 metres above the sea-level, but was rather rare. A male and female were killed, December 1st, 1901. Dr. Selater has recorded it as occurring in Peru at an altitude of 12,170 feet (P. Z. S. 1881, p. 488), on the authority of Prof. Nation. It feeds on larvæ which it hacks up directly from the ground.

21. *CINCLODES BIFASCIATUS* Selater.

This bird reminds one in its habits of the European *Cinclus*. It lives on rivulets, hopping from stone to stone. Now and then it dips its head under the water to catch larvæ and small crabs, sometimes even descending wholly into the stream. It builds its nest of grass-straws in shrubs at the water's edge. It is found up to an altitude of about 5000 metres above the sea-level.

22. *GEOSITTA CUNICULARIA* (Vieill.).

Iris yellowish brown. To judge from the general coloration of the plumage and the measurements, the *Geositta* obtained at Moreno belongs to this species, but the breast seems to be entirely unspotted in the specimens brought home. It may, therefore, perhaps represent a distinct race or subspecies. It is too small to belong to *G. rufipennis*, from which it also differs in having the second primary almost wholly rufous on the inner web, and the first basally and centrally with a rufous tinge.

The collector states that this bird is common at Moreno, where it runs on the sandy ground among the Tola-bushes, feeding on insects. Its flight is in curves up and down, and when it descends it seems to fall vertically to the ground.

23. *UPUCERTHIA DUMETORIA* Geoffr. et d'Orb.

Only one specimen was observed, shot at Moreno in December, 1901. It was feeding on insects.

24. *LEPTASTHENURA EGITHALOIDES* (Kittl.).

Mr. von Hofsten remarks, as others have done before him, that this bird in its behaviour recalls the Long-tailed Tit of Europe. A pair had their nest, containing three white eggs, in a stone wall at Moreno in December, 1901.

25. *PHACELLODOMUS STRIATICEPS* (d'Orb. et Lafr.).

A nest of this bird was found at Moreno in December, 1901. It was composed of small sticks, and was 150 cm. high and 40 cm. broad. It contained three white eggs.

26. *AGRIORNIS ANDICOLA* d'Orb.

A single specimen, observed at Moreno, was shot on December 4th, 1901. It was feeding on insects.

27. *MUSCISAXICOLA RUFIVERTEX* d'Orb. et Lafr.

This bird is stated to be rather common in small flocks on the moist meadows at Moreno.

28. *CENTRITES OREAS* Sclater & Salvin.

Iris dark brown. Two examples, male and female, must belong to this species, as the former has the inner web of the primaries pale cinereous, almost white, and similarly the female has the inner web of the primaries pale with a cinnamomeous tinge. Otherwise they agree with the description of *C. niger* in the Cat. of Birds (xiv. p. 62), but the above-mentioned characteristics are said to be the distinguishing features of *C. oreas*. The bird, stated to belong to the fauna of Bolivia and Peru, is thus recorded as an inhabitant of the Cordillera of Argentina.

At Moreno it was not uncommon in suitable localities. It was usually seen in pairs on the moist meadows, where it hopped about catching insects.

—29. *ATTICORA CYANOLEUCA* (Vieill.).

Iris dark brown. This Swallow nests in holes in the barrancas at the same places as *Bolborhynchus*, and in company with it. It sometimes uses the burrows made by the Parrakeet. It was not numerous at Moreno.

30. *CHRYSOMITRIS UROPYGIALIS* Selater.

This bird lives in cultivated places, on meadows, and near water. It is not common; it feeds on seeds. It was observed at Moreno up to an altitude of at least 4600 metres above the sea-level.

31. *PSEUDOCHLORIS LUTEA* (d'Orb. et Lafr.).

This bird is usually seen singly along the rivulets at Moreno, where it is common. It feeds on seeds and buds.

32. *ZONOTRICHIA CANICAPILLA* Gould.

Iris yellowish brown. Very common at Moreno, feeding on seeds and insects; it builds its nest in stone walls and under the roofs of houses.

The specimens from Moreno are to a certain extent intermediate between *Z. pileata* and *Z. canicapilla*, having the coloration of the former and especially the black bands on the sides of the crown; but they are much larger than *Z. pileata*, almost attaining the size of *Z. canicapilla*, and I therefore refer them to that species. Wing 80, tail 75, culmen 13 mm.

Schalow (Fauna Chilensis, Bd. i. Zool. Jahrb. Suppl. p. 723) regards *Z. canicapilla* as a subspecies of *Z. pileata*.

33. *PHRYGILUS FRUTICETI* (Kittl.).

Rather scarce, feeds on seeds and buds. Two specimens were shot at Moreno in November, 1901. It has been reported by Dr. Selater from Peru, at an altitude of 14,000 feet (*cf.* P. Z. S. 1881, p. 486).

34. *PHRYGILUS ATRICEPS* (d'Orb. et Lafr.).

Iris yellowish brown. This bird was common in the Pampas-grass (*Gynerium*) along the rivulets at Moreno. Its food consisted of seeds and buds. It builds its nest in tufts of Pampas-grass. One which Mr. von Hofsten brought to me was taken on December 20th, 1901, and was constructed of grasses and pieces of dry herbs, lined with horse-hair and the wool of the vicuña. It contained three eggs, bluish green in colour, with numerous small pale brown spots and blotches scattered all over the surface, most densely at the greatest circumference and least at the ends. The longitudinal diameter of the eggs was 21-25 mm., the greatest transverse 17 mm.

35. *PIRYGILUS PLEBEIUS* Cab.

Iris brown. This was the most common bird at Moreno. It resembles the European House-Sparrow in its habits. It builds its nest in crevices in the rocks, but also under the roof-tiles of houses and in bushes. The eggs are said by Mr. von Hofsten to be white, measuring 22 mm. in length by 15 mm. in breadth. Usually there are three or four in a nest. The food of the bird consists of seeds, buds, and caterpillars.

IV. BIRDS OF SAN LUIS, NEAR TARIJA, IN BOLIVIA.

The third Station of the Swedish Expedition was near Tarija, at a place named San Luis. In its surroundings it resembled the second as regards the natural conditions, but it was not so high above the sea as Moreno, and, although "puna" prevailed round Tarija as well, there was a richer vegetation, which made a change for the better. The bird-life was almost entirely different from that of Moreno, and decidedly richer.

The following birds were collected at the third Station and during excursions around the same.

1. *NOTHURA BOLIVIANA* Salvadori.

The specimen from San Luis which I refer to this species (iris brown) has no markings on the inner webs of the three outer primaries. Wing 125 mm., tarsus 29 mm. It was shot in January 1902, and eggs taken on January 16th probably belong to this species, as no other member of the family was procured. They were laid in a shallow nest lined with twigs, straws, and feathers of the bird. They were four in number and measured from 43 to 45 mm. in length to 32.5 mm. in thickness. They have the usual enamelled or china-like surface, and are in some lights greyish with a plum-coloured tinge, in others brownish with a tinge of chocolate.

2. *COLUMBULA PICUI* (Temm.).

One specimen, shot at San Luis, January 27th, 1902. Iris lilac.